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September 16, 1996

Mr. William F. Caton
Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Re: *Ex Parte* Presentation in
CC Docket No. 92-297.

Dear Mr. Caton:

This letter will serve to respond, on behalf of Texas Instruments, Inc., to various *ex parte* contacts from counsel for Sierra Digital Communications, Inc. regarding the *Fourth Notice of Proposed Rulemaking* issued in the above-captioned proceeding.

Sierra Digital seeks to have the Commission split the 31 GHz band into two 150 MHz bands -- one in which LMDS would be primary and one reserved on some sort of exclusive, protected basis for the current secondary uses allowed in the band. Sierra Digital has been supported in this endeavor by only two LMDS parties -- equipment manufacturers that say they plan to use the proposed 150 MHz as a return-link complement to the primary 850 MHz LMDS allocation.

TI urges the Commission to proceed expeditiously to complete the *Fourth Notice* by doing exactly what it proposed last July: allocating 300 MHz of spectrum for LMDS use and leaving the existing users of the band in the same secondary status they have always been in. In reality, Sierra Digital seeks to have the Commission warehouse 150 MHz of valuable spectrum on a nationwide basis for the benefit of only a handful of secondary users of the band. Sierra Digital's own submissions effectively demonstrate that such an outcome would have the effect of rewarding an extremely inefficient use of the 31 GHz spectrum -- all at the expense of the numerous benefits of LMDS that have been catalogued throughout the four years of this proceeding and at the expense of millions of dollars in deficit-reducing auction revenue.

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On the basis of Sierra Digital's filings, several facts are apparent:

- First, it is obvious that Sierra Digital is using the *Fourth Notice* to convert its traffic monitoring service from secondary to protected -- something far beyond the scope of this proceeding. Under well-settled Commission precedent, secondary means secondary. When the Commission first authorized alternative secondary uses in the 31 GHz band, it expressly refused to give public safety organizations priority status.¹ Instead, the Commission concluded that "no interference protection would be afforded" to licensees at 31 GHz, and the Commission cautioned that "if an entity does not feel that its operations can exist in an environment where there is the potential for harmful interference, then it should operate in other bands where protection is provided."²

Thus, the current users of the band accepted authorizations at 31 GHz with the full knowledge that their services were unprotected. This is not to say that the Commission is somehow relieved from finding that the reallocation of spectrum proposed by the *Fourth Notice* is in the public interest. That is what a Report and Order is designed for. However, the secondary nature of the service at 31 GHz -- and the current users' knowledge that their operations were unprotected -- is a legitimate component of that public interest calculus. Indeed, TI submits that any rational cost-benefit analysis or public interest balancing will result in the finding that the Commission was correct in proposing the reallocation of 300 MHz of spectrum for LMDS on a primary basis.

- Second, it is simply not true, as Sierra Digital has suggested throughout this proceeding, that "a 31 GHz allocation to LMDS in excess of 150 MHz lacks justification in the record" and would "give each LMDS operator more spectrum than the Commission has concluded on the record that it needs for the service".³ Indeed, the Commission has consistently recognized the need for more than one GHz of unencumbered spectrum for the LMDS service. In fact, the Commission originally proposed two GHz of spectrum for

¹ *Spectrum Utilization Policy for the Fixed and Mobile Services' Use of Certain Bands*, 57 R.R.2d 1162, 1163 (1985).

² *Id.* at 1164.

³ *Sierra Digital September 3, 1996 Letter* at 3.

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LMDS.⁴ Moreover, the FCC explicitly recognized that the band plans coming out of this docket failed to provide adequate spectrum for LMDS.⁵ Indeed, the Commission not only proposed the additional 300 MHz at issue in this phase of the proceeding but also directed its staff to renew discussions with NTIA leading to the use of government spectrum in the 25.25 - 27.0 and 27.0 - 27.5 GHz bands for LMDS.⁶ As the Commission concluded:

[W]e recognize the need to designate additional spectrum for LMDS. There is significant consumer demand for alternate providers of local exchange services, internet access, LANs and video teleconferencing. The LMDS proponents note that this demand can be more immediately satisfied, in an economically and technically efficient manner, by LMDS than by many of the alternate transmission media, thus making these services more accessible rapidly to a wider segment of the population. The proposed designation of 300 MHz of spectrum would ensure consumers access to new and competitive technologies.⁷

These conclusions, which are no less true today, were based on more than three and a half years of study and thousands of pages of comments.⁸

● Third, it is evident that Sierra Digital wholly misunderstands the prospective uses of an additional 300 MHz of spectrum for LMDS. It is true that the spectrum could be used simply as a return link for the 850 MHz allocation -- although, as the record shows, such a use will require the development and manufacture of relatively expensive equipment. Clearly, that

⁴ See *Local Multipoint Distribution Service*, 8 FCC Rcd 557 (1993).

⁵ See, e.g., *Fourth Notice* at ¶ 40.

⁶ *Id.* at ¶ 39.

⁷ *Id.*

⁸ Likewise, Sierra Digital is incorrect to state that a "negotiated resolution," which would "eliminate the need for parties to seek redress through reconsideration or judicial review," might "advance by months or years the date when LMDS operators can begin providing service at 31 GHz". *Sierra Digital September 3, 1996 Letter* at 2. Neither a petition for reconsideration nor a petition for review would by themselves delay the introduction of LMDS at all.

is the use that Hewlett-Packard and Endgate have in mind. However, it is also clear from the record that other LMDS manufacturers and users recognize that the spectrum has additional potential. For example, the 31 GHz spectrum is also particularly suitable as a back-haul link among LMDS hubs.⁹ TI also believes that the spectrum could be used as a stand-alone LMDS system in a campus-like setting -- e.g., a university, medical center or business park. Or, perhaps even more likely, it could be used for a combination of these purposes.

In this regard, TI urges the Commission to consider in particular the filings of potential LMDS users. For example, CellularVision USA, Inc. notes the auctioning of 1.3 GHz of spectrum (along with flexible post-auction disaggregation and partitioning authority) will facilitate "access to LMDS spectrum by non-profit and educational institutions, which are not likely to be in a financial position to bid for LMDS licenses."¹⁰ Likewise, the Public Broadcasting Service and Association of America's Public Television Stations states that

if the Commission awards the 1.3 GHz of proposed LMDS spectrum in a single block and allows any prevailing LMDS licensee who chooses not to use the full 1.3 GHz to sublease excess LMDS capacity to third parties, significant public interest benefits could be achieved. The Commission should seize this opportunity to encourage LMDS operators to lease excess capacity to nonprofit educational entities.¹¹

As these parties recognize, such benefits can more readily be achieved if the Commission allocates the full 300 MHz of spectrum as proposed in the *Fourth Notice*. Moreover, the revenues derived from such uses may prove critical to LMDS operators -- who now face the task of waiting for the development of comparatively expensive bi-directional equipment at 31 GHz.¹²

⁹ This is particularly important since it appears unlikely that spectrum at 38 GHz will be available for LMDS back-haul usage.

¹⁰ *CellularVision Reply Comments* at 11-12.

¹¹ *APTS/PBS Reply Comments* at 4. *See also Comments of RioVision* at 2.

¹² Sierra Digital also threatens judicial action since, it says, an allocation to LMDS in excess of 150 MHz "lacks justification in the record" and would, accordingly be "arbitrary and capricious". *Sierra Digital September 6, 1996 Letter to Jennifer Warren* at 3. However, an allocation in excess of 150 MHz is fully supported by the record of this proceeding. *See Fourth Notice* at ¶ 100.

● Fourth, it is obvious that the usage of this band by current secondary users is minuscule -- particularly compared with the usage that could be made of this spectrum by LMDS operators (who would, of course, pay for the spectrum they use). There are more than 39,000 state, county and municipal jurisdictions in the United States.¹³ Of these, it appears that only about 30 hold secondary authorizations in the 31 GHz band,¹⁴ even though more than ten years has past since the Commission authorized secondary alternative uses at 31 GHz.¹⁵ Furthermore, only a handful of the current licensees has participated in this proceeding.¹⁶ And an even smaller proportion has actually opposed the reallocation of the 31 GHz spectrum.

TI submits that it would be unconscionable -- based on this record of scant and scattered use -- to warehouse 150 MHz of free spectrum nationwide. Simply put, why should 150 MHz of spectrum be warehoused in more than 39,000 jurisdictions when it will be used for traffic monitoring for the foreseeable future in only a handful of these jurisdictions? Why should this spectrum be warehoused when it could be auctioned and used? The spectrum warehousing which Sierra Digital seeks is simply far out of proportion to any existing or likely use by the secondary incumbents at 31 GHz.

¹³ *Statistical Abstract of the United States 1995*, U.S. Dep't of Commerce 297 (September 1995).

¹⁴ While Sierra Digital originally claimed that the Commission had seriously undercounted the number of licensees, the company has been wholly unable to demonstrate that this is the case.

¹⁵ See *Spectrum Utilization Policy*, 57 R.R.2d at 1162 (1985).

¹⁶ Despite its claims, Sierra Digital has been wholly unable to quantify the substantial growth in the use of the band which it says it expects. For example, in its most recent submission, Sierra Digital points to 13 other jurisdictions where it says "[l]arge installations [are] presently pending". However, it does not explain what it means by "presently pending" -- for example, whether it means anything more than jurisdictions where Sierra Digital has sought to market its equipment. It does not appear to mean that the "installations" have been authorized or applied for.

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• Fifth, as CellularVision has shown¹⁷ (and as Sierra Digital tacitly agrees)¹⁸, the current use of the 31 GHz band is extremely inefficient, and the current users of 31 GHz have absolutely no incentive or desire to improve the efficiency of their spectrum use.¹⁹ Indeed, Sierra Digital asks the Commission to reward that inefficiency -- in contravention of years of Commission policy -- because more efficient use of the spectrum would raise the cost of the radios involved from \$4,000 to \$8,500 - \$11,500, which Sierra Digital claims (without any support) is "well out of reach of most public safety agencies".²⁰

Moreover, even with the current inefficient equipment, it appears that a majority -- if not all -- of the current secondary users could be accommodated with far less than 150 MHz of spectrum. For example, CellularVision has submitted a persuasive study showing that current uses could be accommodated in 50 MHz of spectrum.²¹ In response, even Sierra Digital can point to only *eight* cities (and some unidentified areas of California and Washington) that could not be accommodated in 50 MHz. Again, such scant and inefficient use does not support the nationwide warehousing that Sierra Digital seeks.

• Finally, it is simply not correct to say that the proposed reallocation would "leave no spectrum at all for 31 GHz point-to-point operations".²² In fact, Sierra Digital's customers would have access to the band on the same secondary basis they do today. Sierra Digital

¹⁷ CellularVision's comments contain a technical analysis of the current 31 GHz usage which concludes that the "31 GHz band currently is being used very inefficiently" and that "with an increase in frequency stability and use of narrower channels, existing uses . . . can be accommodated in only 50 MHz" of spectrum. *CellularVision Reply Comments* at 9, Exhibit 1.

¹⁸ As Sierra Digital notes, it "takes advantage" of FCC rules that permit 0.03 % tolerance on all frequencies above 19.7 GHz". *Sierra Digital September 10, 1996 Letter* at 3.

¹⁹ Since the current secondary users at 31 GHz do not pay for the use of the spectrum, they certainly have no economic incentive to improve their efficiency.

²⁰ *Id.*

²¹ *See CellularVision Reply Comments* at Exhibit 1.

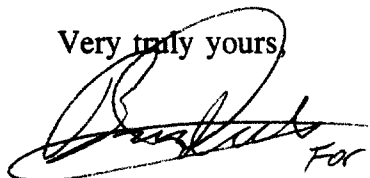
²² *Sierra Digital September 3, 1996 Letter* at 3.

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merely assumes -- without support -- that LMDS use will necessarily result in the inability to operate traffic monitoring equipment.

In short, TI urges that, based on the record before the Commission, the solution sought by Sierra Digital would result in a truly illogical and unsupported policy outcome. It would reward a handful of secondary users with a nationwide allocation to operate spectrally inefficient technology on a primary basis. Such an outcome would fly in the face of well-established Commission policies and would serve to further hamper the nascent LMDS industry's attempts to bring the promise of LMDS to the American public. In light of this, TI urges the Commission to proceed expeditiously with the reallocation as proposed in the *Fourth Notice*.

Very truly yours,

A handwritten signature in black ink, appearing to read "R. Pettit", with a stylized flourish extending from the end.

Robert L. Pettit
Counsel for Texas Instruments, Inc.

cc: The Honorable Reed E. Hundt
The Honorable James H. Quello
The Honorable Rachelle B. Chong
The Honorable Susan Ness
Blair Levin
Jackie Chorney
John Nakahata
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